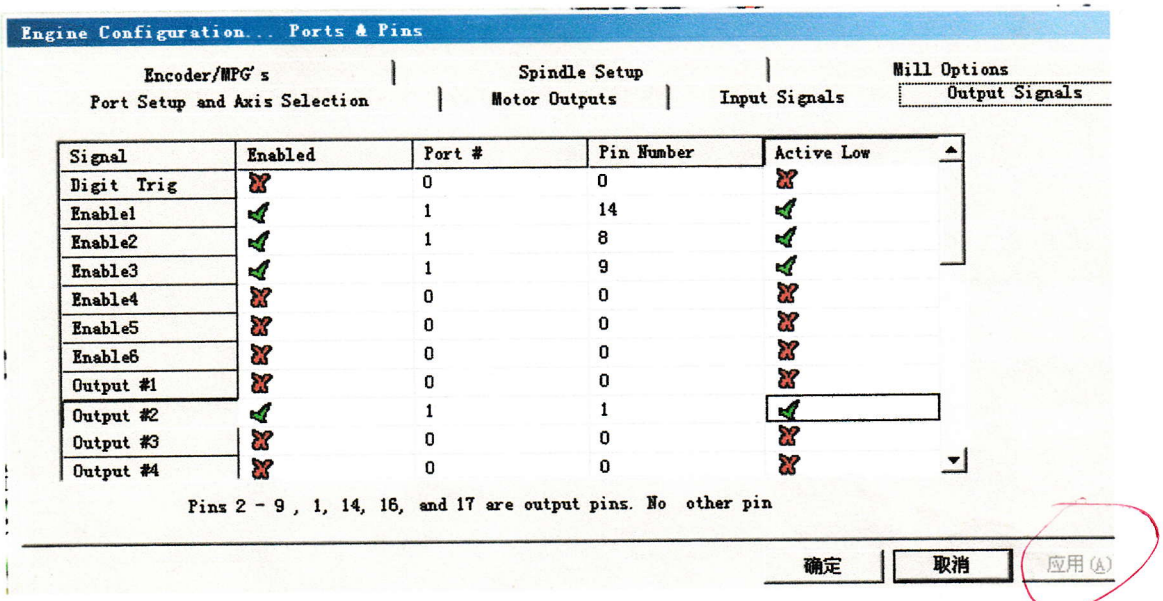
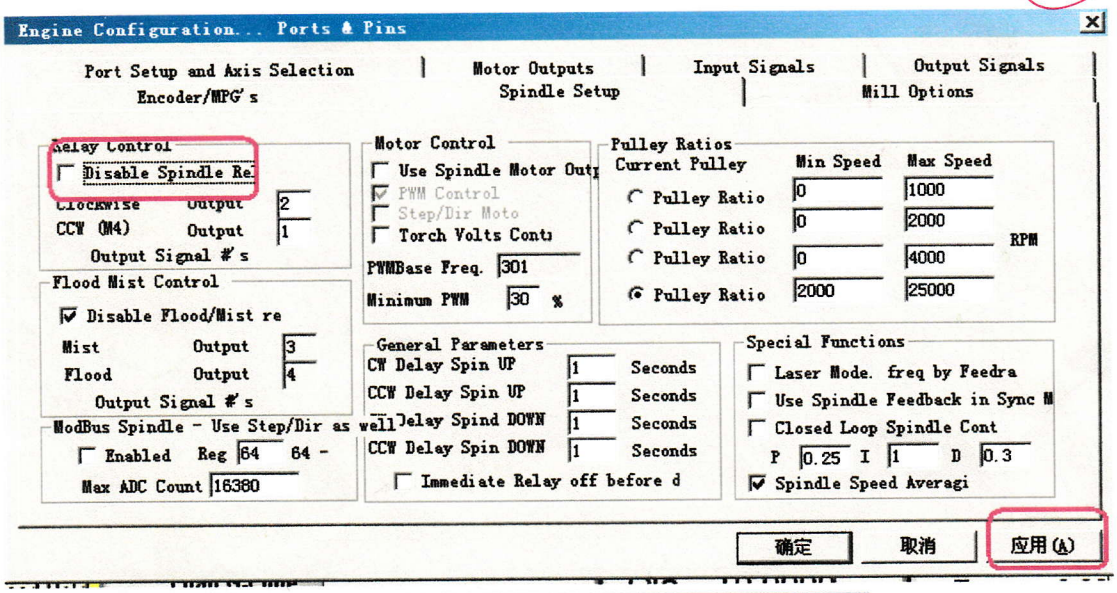
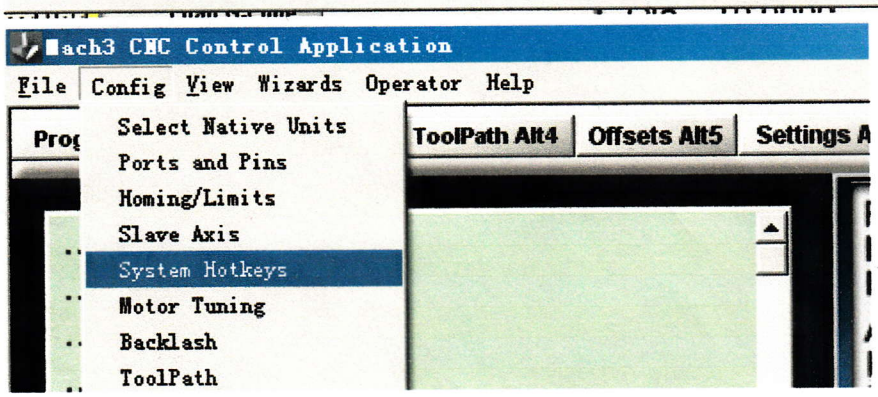
7502

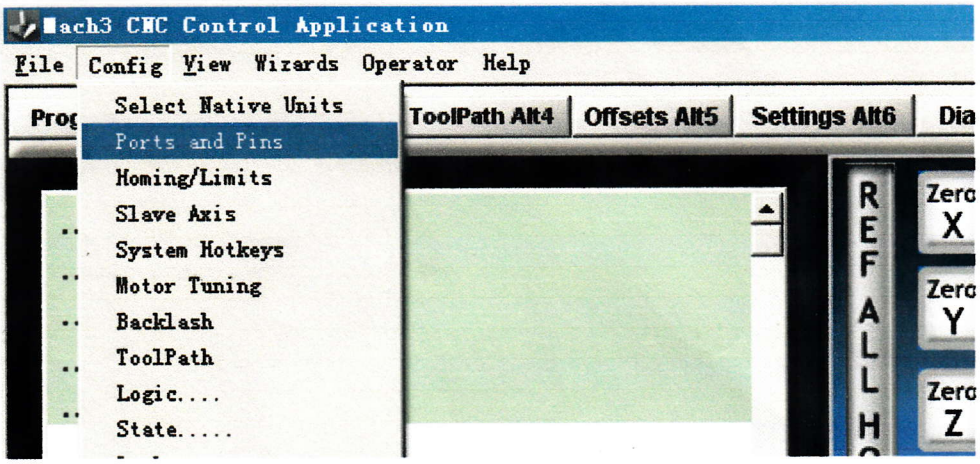

Engine Configuration... Ports & Pins
Encoder/MPG's
Port Setup and Axis Selection
Spindle Setup
Motor Outputs
Mill Options
Input Signals
Output Signals
Signal | Enabled | Port # | Pin Number | Active Low
Digit Trig | 0 | 0
Enable1 | 1 | 14
Enable2 | 1 | 8
Enable3 | 1 | 9
Enable4 | 0 | 0
Enable5 | 0 | 0
Enable6 | 0 | 0
Output #1 | 0 | 0
Output #2 | 1 | 1
Output #3 | 0 | 0
Output #4 | 0 | 0
Pins 2 - 9 , 1, 14, 16, and 17 are output pins. No other pin
确定
取消
应用 (A)

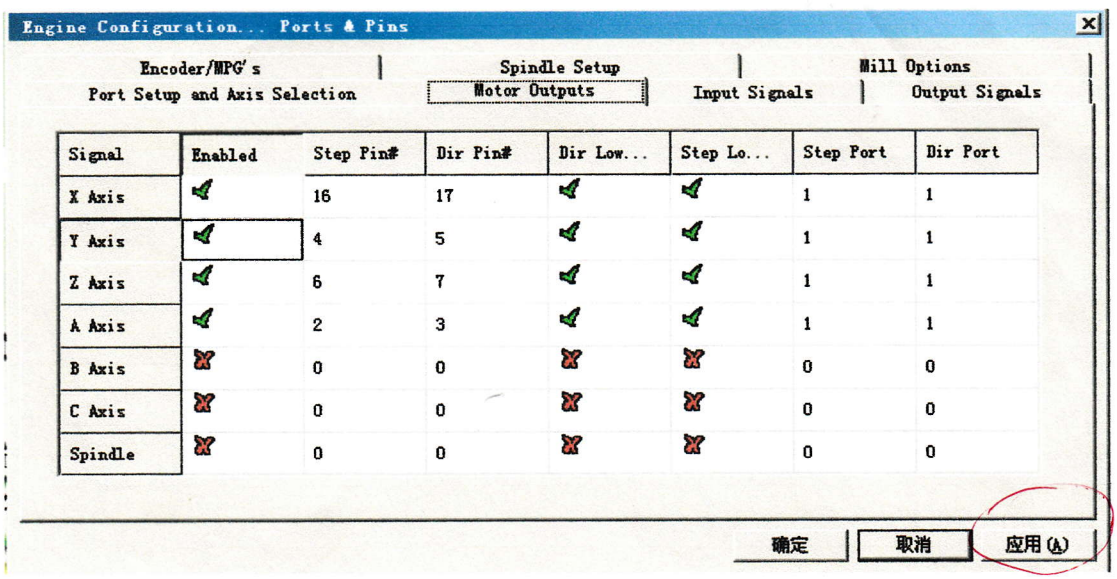

Engine Configuration... Ports & Pins
Port Setup and Axis Selection
Encoder/MPG's
Motor Outputs
Spindle Setup
Input Signals
Output Signals
Mill Options
Relay Control
Disable Spindle Re
CCW (M4) Output 1
Output Signal #'s
Flood Mist Control
Disable Flood/Mist re
Mist Output 3
Flood Output 4
Output Signal #'s
ModBus Spindle - Use Step/Dir as well
Enabled Reg 64 64 -
Max ADC Count 16380
Motor Control
Use Spindle Motor Outp
PWM Control
Step/Dir Moto
Torch Volts Cont
PWMBase Freq. 301
Minimum PWM 30 %
General Parameters
CW Delay Spin UP 1 Seconds
CCW Delay Spin UP 1 Seconds
Delay Spind DOWN 1 Seconds
CCW Delay Spin DOWN 1 Seconds
Immediate Relay off before d
Pulley Ratios
Current Pulley
Min Speed
Max Speed
Pulley Ratio 0 1000
Pulley Ratio 0 2000
Pulley Ratio 0 4000
Pulley Ratio 2000 25000
RPM
Special Functions
Laser Mode. freq by Feedra
Use Spindle Feedback in Sync M
Closed Loop Spindle Cont
P 0.25 I 1 D 0.3
Spindle Speed Averagi
确定
取消
应用 (A)

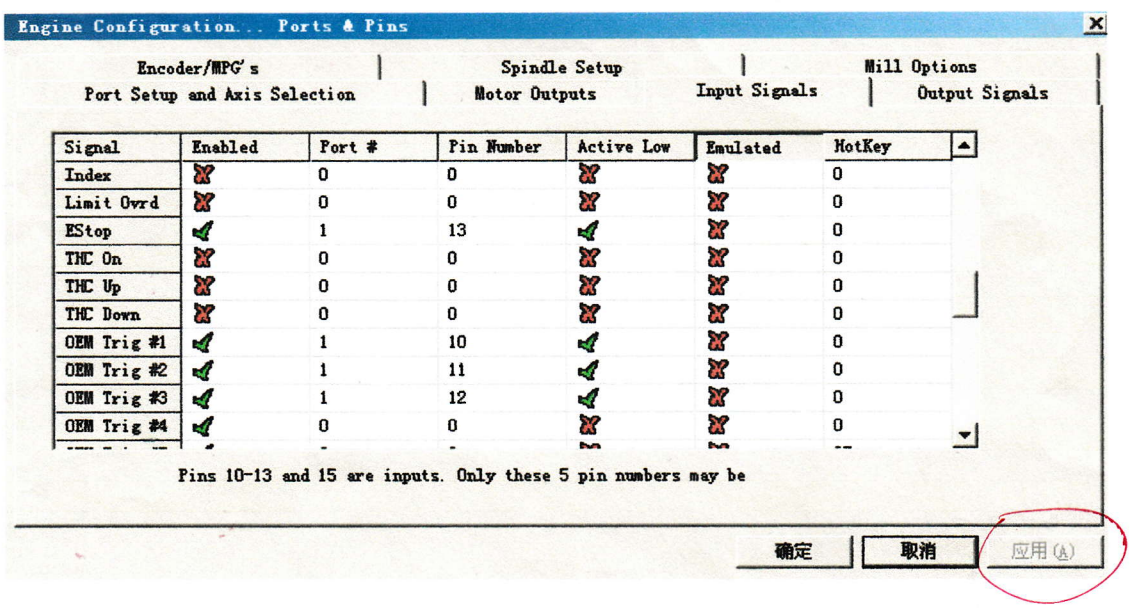

achine CNC Control Application
File
Config
View
Wizards
Operator
Help
Select Native Units
Ports and Pins
Homing/Limits
Slave Axis
System Hotkeys
Motor Tuning
Backlash
ToolPath
ToolPath Alt4
Offsets Alt5
Settings A

7.5.07

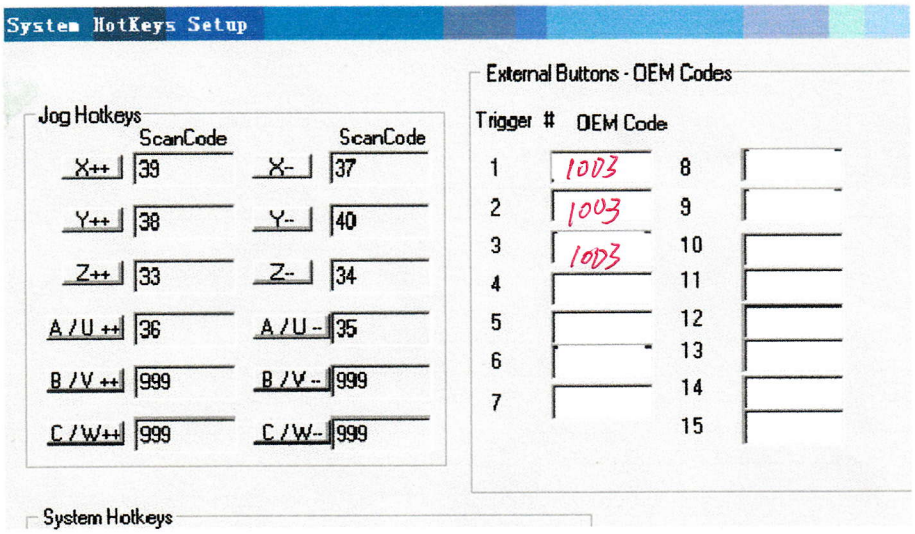
MACH3mill Parameter is set



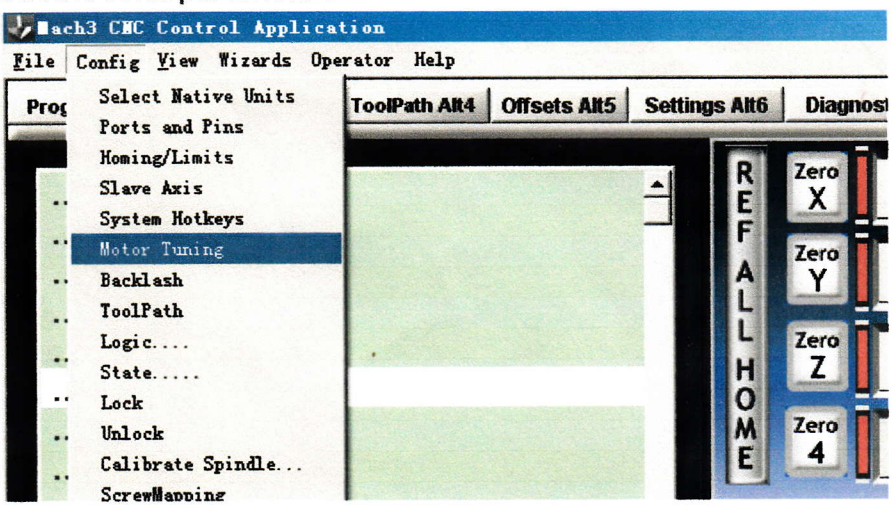




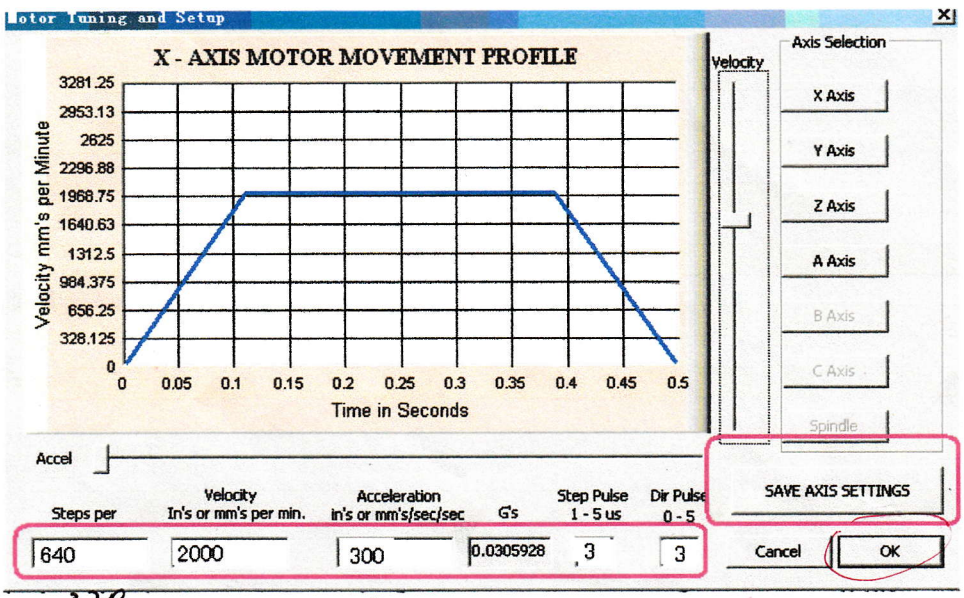
70502



Set the XYZ parameters



All axis according to the plans set



X ~~400~~ 320 1200 300

Y 400 1200 300

Z 640 600 300

version 3.2

Thank you very much for your selection of TS series engraving machine east, TS series engraving machine is east of electronic production of high quality, multi-function carving machines, is widely used in the handicraft, anaglyph, badges, medal, model, PCB drilling sculpture, biological experiment, etc

The machine adopts high-grade aluminium processing, and adopts imported precision ball screw machining accuracy can be guaranteed.

This manual is TS series small engraving machine manual

This handbook provides users installation and operation parameters Settings, abnormal diagnosis and maintenance and safe use of related matters. In order to guarantee the normal installation and operation this series engraving machine products, please use TS series engraving machine, be sure to read carefully before this handbook. This manual is random send attachments, please use appropriate is custodial, to prepare for future use.

If still exist in use process can not solve the difficult problem of this unit, please contact with dealers or direct contact our customer service center.

The contents of this manual data are subject to change without notice.

Eye

The first chapter: safety precautions and inspection

Chapter 2: engraving machine installation and process

Chapter 3: control software installation

Chapter 4: auxiliary software installation

Chapter 5: interface

Chapter 6: beginner learning methods

Chapter 7: attention

Chapter 8: shortcuts list

Chapter 9: common fault

Chapter 10: maintenance and maintenance

Chapter 11: each type machine motor parameters

Chapter 12: appendix 1 - tools selection

Chapter 12: appendix 2 - ARTCAM profile

Chapter 13: appendix 3 - wen tai engraving system application

The first chapter of safety precautions and inspection

1.1 safety precautions

Responding to be installed in the gas containing the explosive environment, otherwise have caused the explosion danger

Responding to confirm the input power is completely disconnect circumstances, can the attachment plug and play, otherwise it may cause controller failure

Responding to this device in the circuit and its components, please contact with internal risk of electric shock, otherwise there.

When using the controller interface adopts power grounding terminal center on the basis of the national electrical safety, please regulations and other relevant standards and reliable grounding.

In responding to shut off the power switch indicator, after 5 minutes, do not touch any parts within the controller boards and utility, which involves part can be confirmed after discharge, or have built-in electric shock risk.

Responding to please screw gaskets and conductive into such foreign or internal controller and the danger of fire damage controller

Responding to start if burning fuse, please confirm the internal and external fittings of short-circuit without changing the same specification after electrify. Fuse

Under the state adopts controller power open not inserted output, otherwise it may damage the circuit inside the controller

Don't be placed in the second-ranking controller can rain or sunshine point-blank, otherwise have damaged the controller

After the open-package inspection 1.2

Dong da electric TS series engraving machine factory has undergo strict testing and quality inspection. After buy, please check whether the packing of the products for transportation and damage, check the immodesty related accessories are complete.

Responding to annex: see attached list

Responding to such as are found, please contact the electric equipment of or dealers.

The second chapter engraving machine installation and machining process

2.1 using environment

Had no corrosive gas, steam and dust

Responding to 20% ~ 90% environment humidity scope, condensation

Responding to vibration than 5.8 m/s2 (0.6 g),

Responding to no interference sources

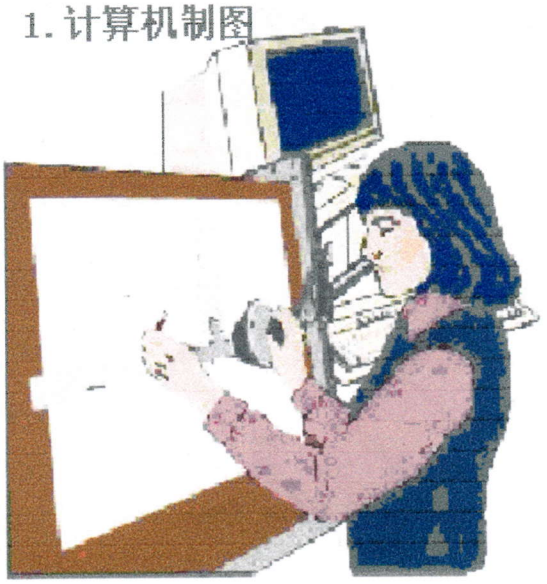
Responding to environmental temperature range - 10 ° C ~ 50 ° C

Responding to ban in gas and liquid inflammable, explosive or dangerous environment using solid

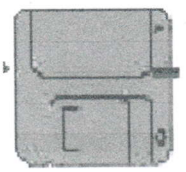
With 2.2 process machine movement coordinates

CAD

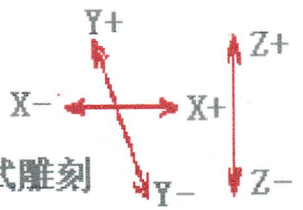
1.计算机制图



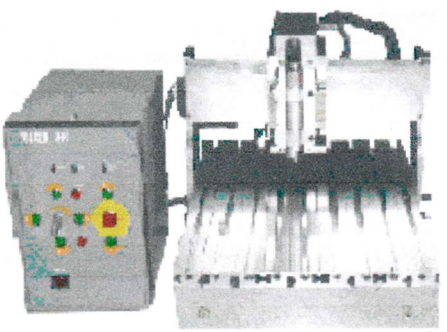
2.ARTCAM设置刀具路径



3.MACH3打开刀路文件（G代码）



4.对刀试雕刻



Chapter 3: software installation

Software and 3.1

Note: the software installation process ARTCAM except installation process choose language by default installation other outside! After the completion of the software installation must restart the computer!

After the installation is complete in desktop ICONS, you can generate a few only retains the following several ICONS AutoCAD 2004 ArtCAM Pro Mach3Mill

3.2 software profile

AutoCAD 2004----- Professional computer-aided mapping software

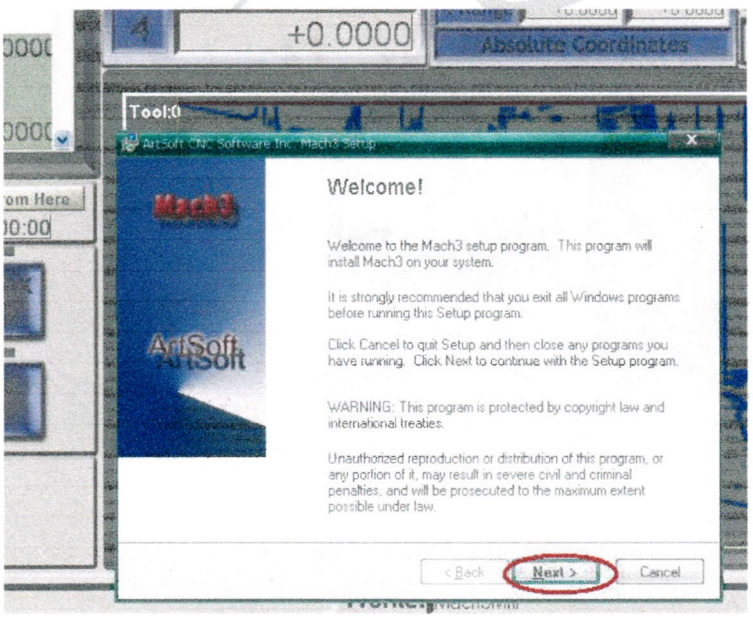
ArtCAM Pro ------ The software (graphics, text, anaglyph, tool path editor),

Note: the tool path to preserve the format selection G Code (mm) (tap)

Mach3Mill ------- Sculpture software (carving machine control software).

3.3 software installation

1, will enter into the drive disc, MACH directory, and double-click. "NO.1" MACH software installation, the diagram below the window



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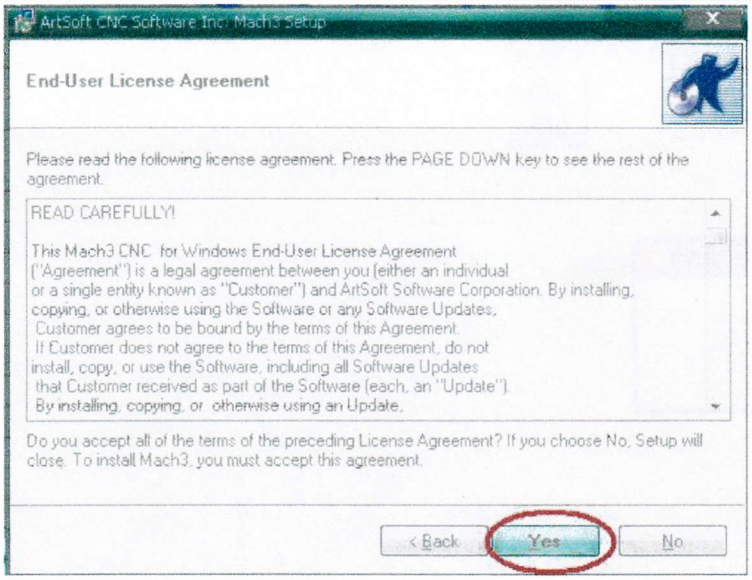
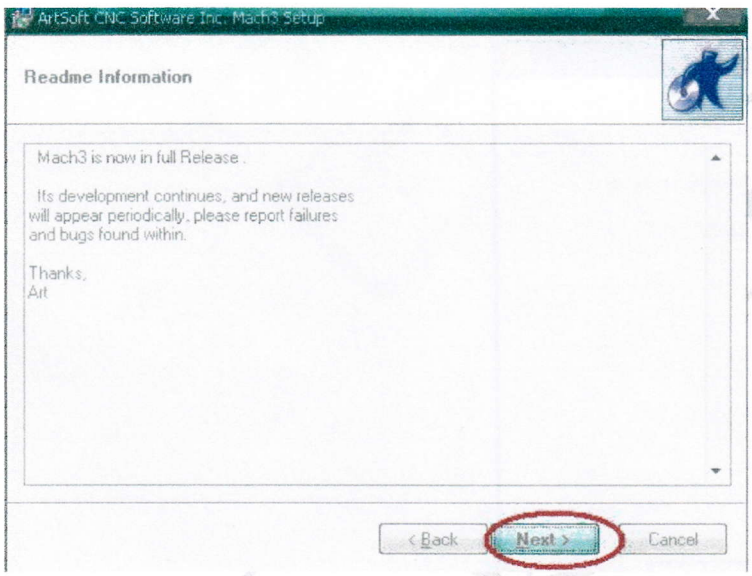
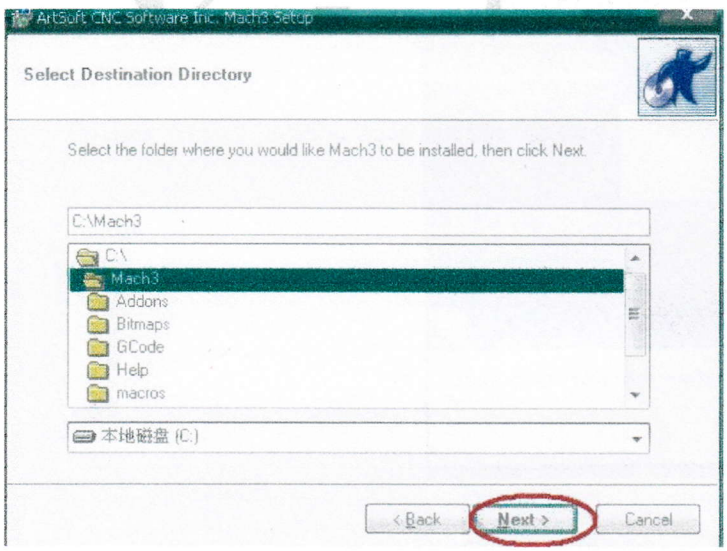
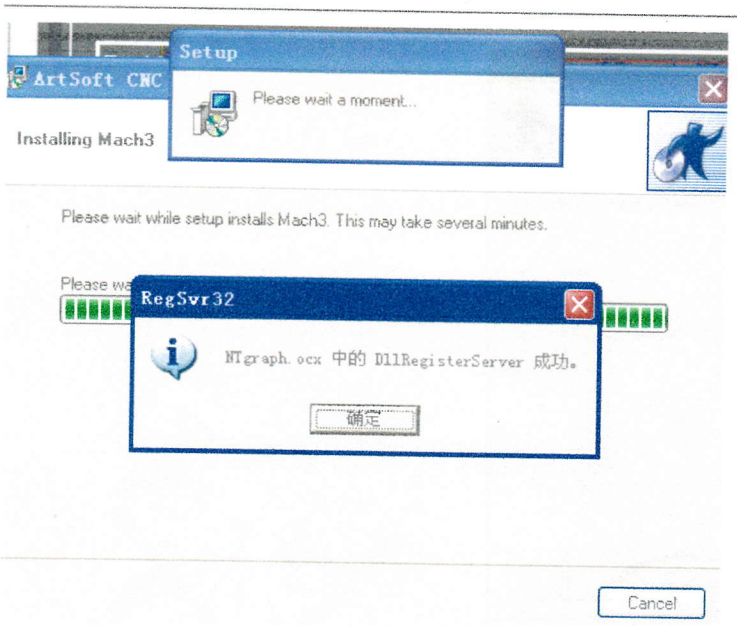
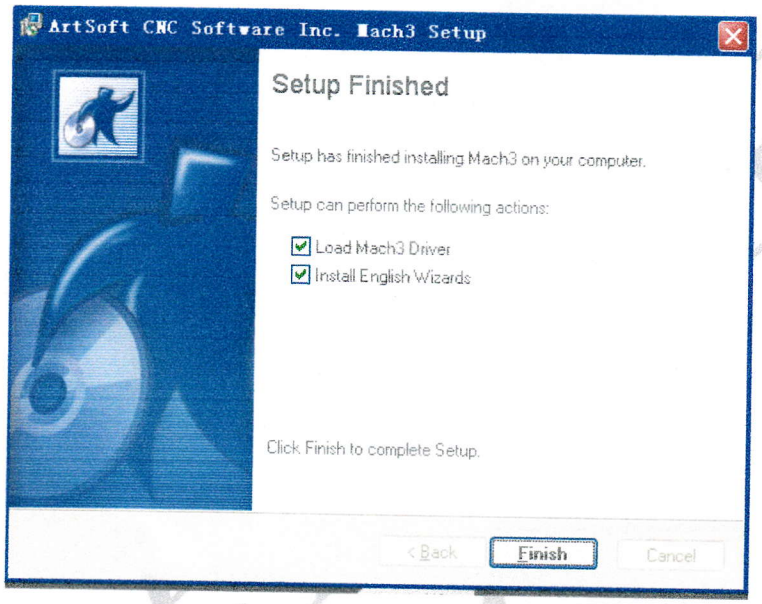
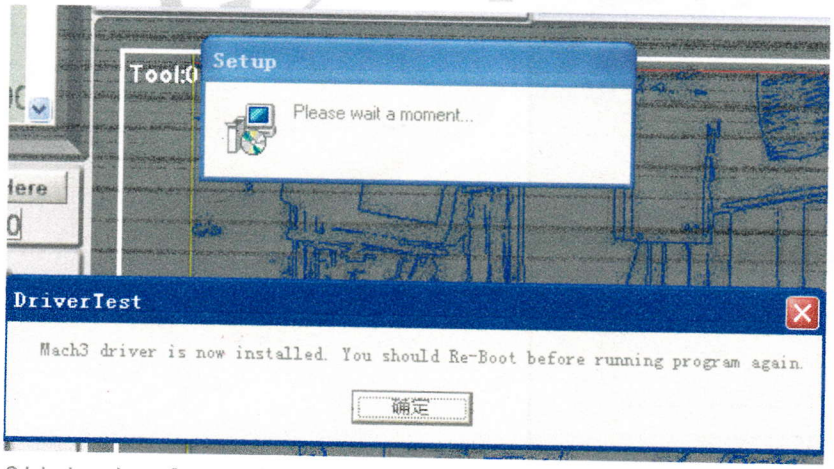

ArtSoft CNC Software Inc. Mach3 Setup
End-User License Agreement
Please read the following license agreement. Press the PAGE DOWN key to see the rest of the agreement.
READ CAREFULLY!
This Mach3 CNC for Windows End-User License Agreement
("Agreement") is a legal agreement between you (either an individual
or a single entity known as "Customer") and ArtSoft Software Corporation. By installing,
copying, or otherwise using the Software or any Software Updates,
Customer agrees to be bound by the terms of this Agreement.
If Customer does not agree to the terms of this Agreement, do not
install, copy, or use the Software, including all Software Updates
that Customer received as part of the Software (each, an "Update").
By installing, copying, or otherwise using an Update,
Do you accept all of the terms of the preceding License Agreement? If you choose No, Setup will close. To install Mach3, you must accept this agreement.
< Back
Yes
No


ArtSoft CNC Software Inc. Mach3 Setup
Readme Information
Mach3 is now in full Release.
Its development continues, and new releases
will appear periodically, please report failures
and bugs found within.
Thanks,
Art
< Back
Next >
Cancel


ArtSoft CNC Software Inc. Mach3 Setup
Select Destination Directory
Select the folder where you would like Mach3 to be installed, then click Next.
C:\Mach3
C:\
Mach3
Addons
Bitmaps
GCode
Help
macros
本地磁盘 (C:)
< Back
Next >
Cancel

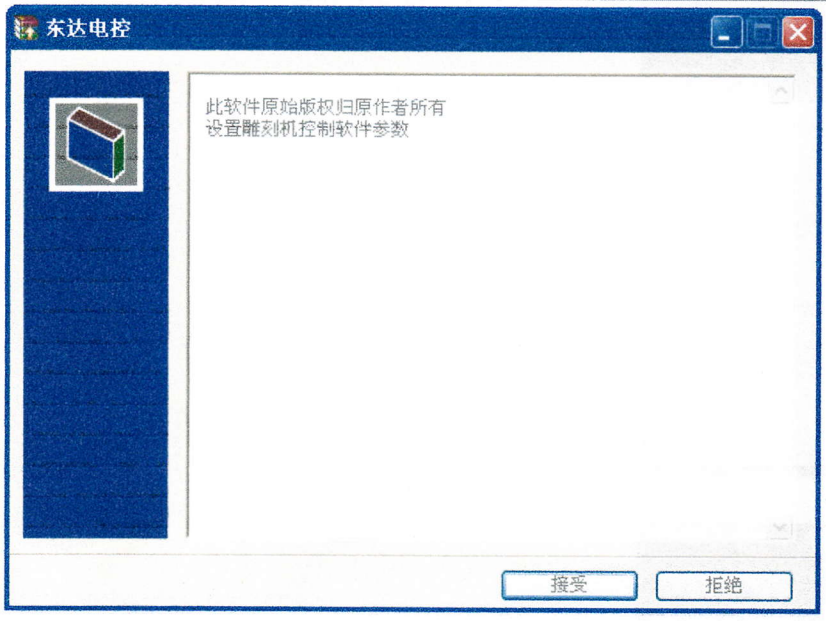


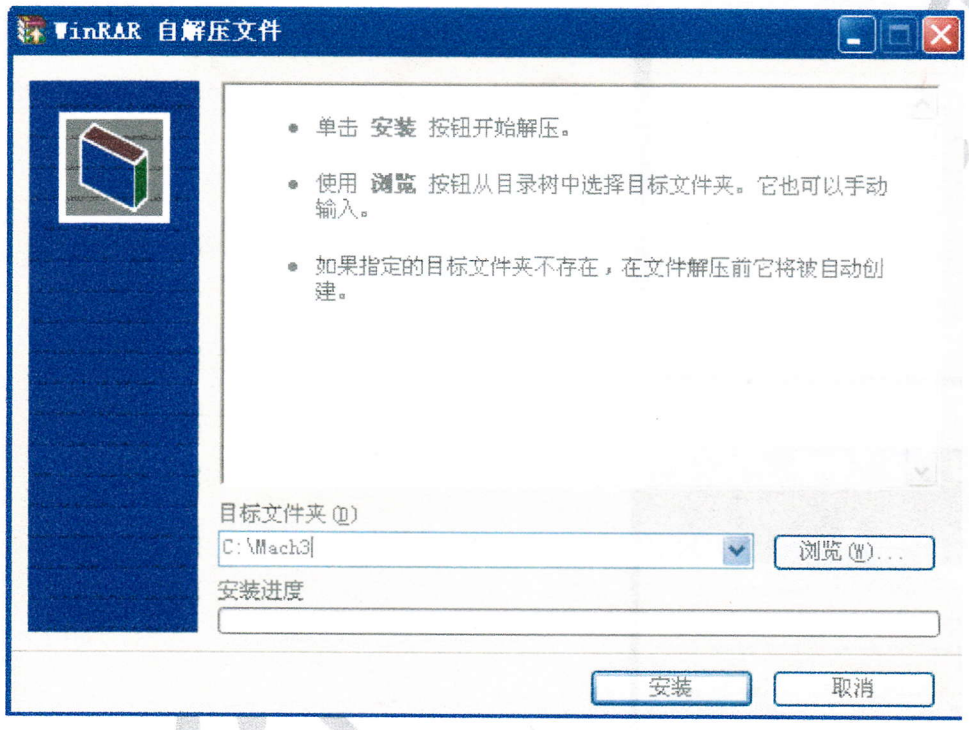




Click ok after the installation

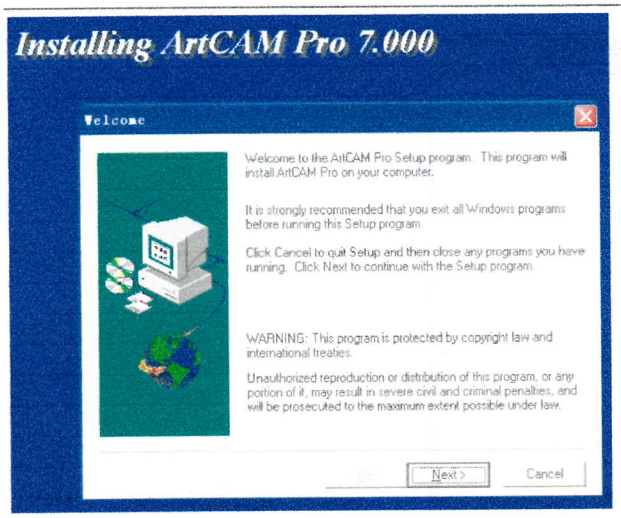
MACH directory, click back. "NO.2", choose corresponding models and install it machine



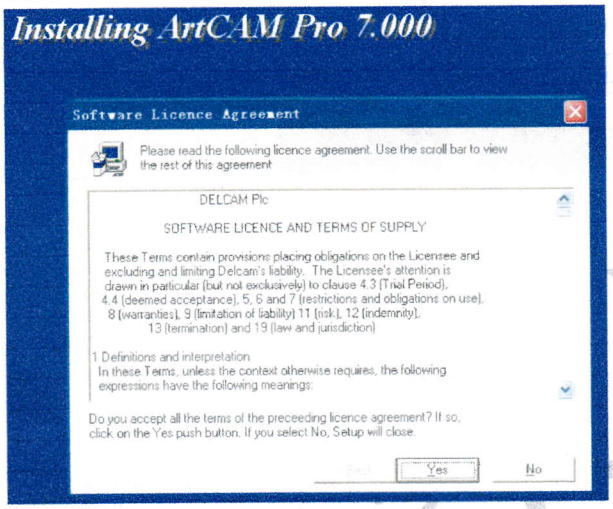


After the installation points MACH software installation

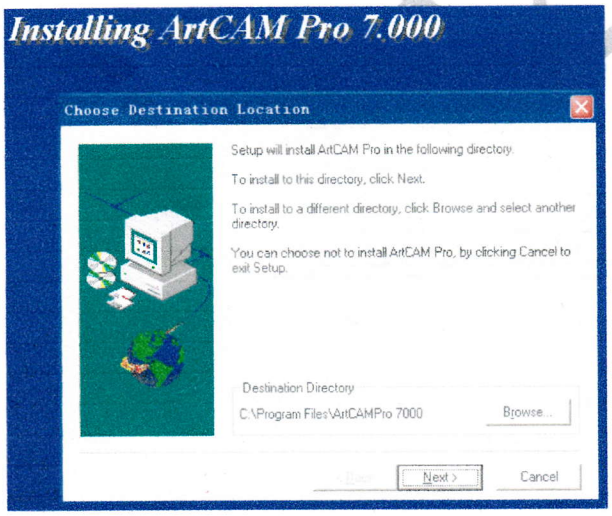
Chapter 4: auxiliary software installation
Artcam installation, CD:\artcam\pdxdac7\install
Will see below interface



NEXT



YES



NEXT

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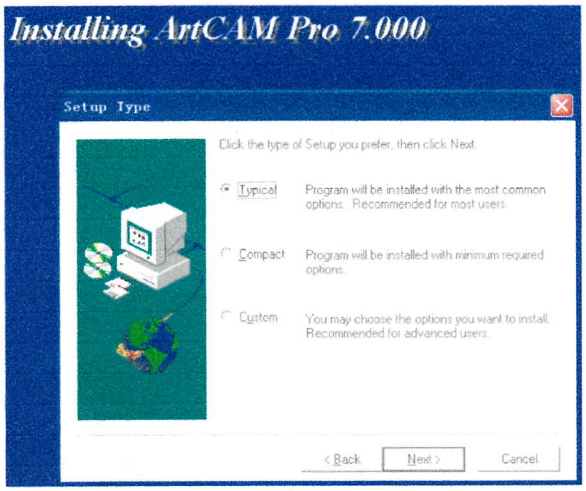
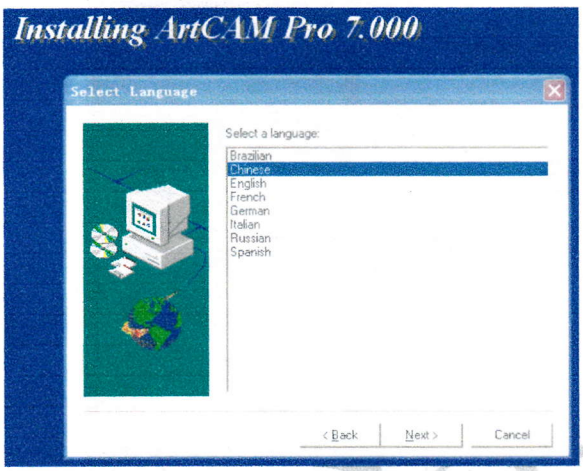
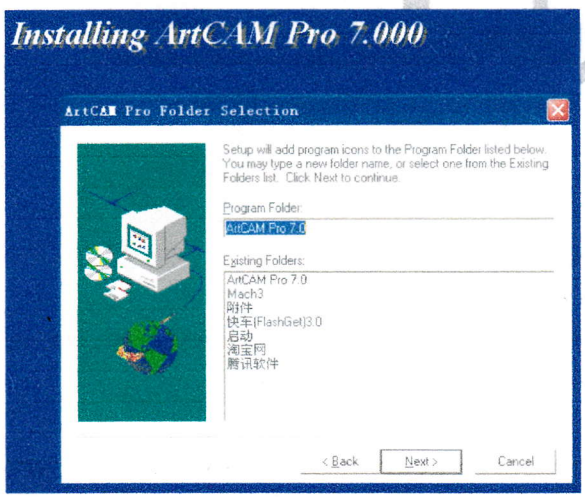


NEXT



Select your languageNEXT



Some NEXT installation

After the completion of the installation directory artcam enter Lock \ software installation PATCH on Lock

Select directory C:\Program Files\artcampro7000\Exec

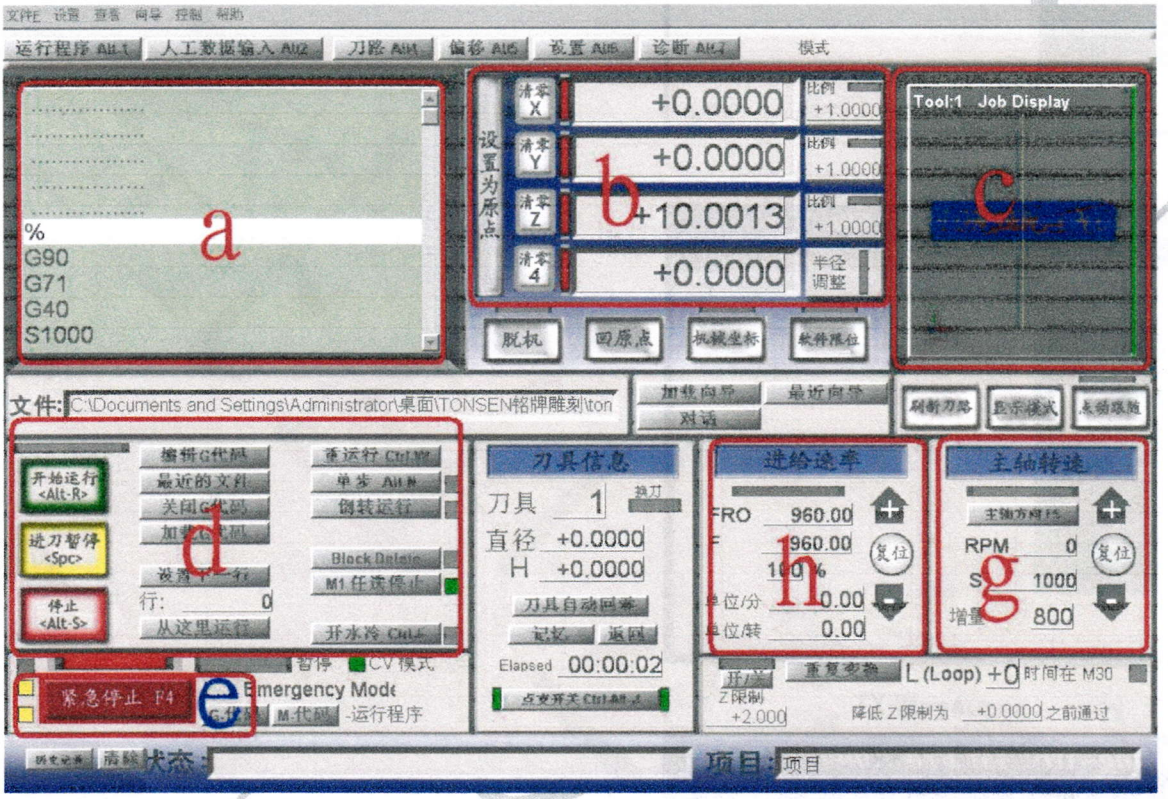
, click Apply

All the installation is completed restart your computer

Chapter 5: control software interface

Desktop ICONS

5.1 software interface. Complete, The software of the screen has seven main interface



A display area code, * * * *

* b, specific axial location

* c, dao and track display (or mouse made corresponding operation),

* d, code execution control button

* e, emergency stop button - open software must point it (green) not flashing
Software can only be used (shortcut key "), "-

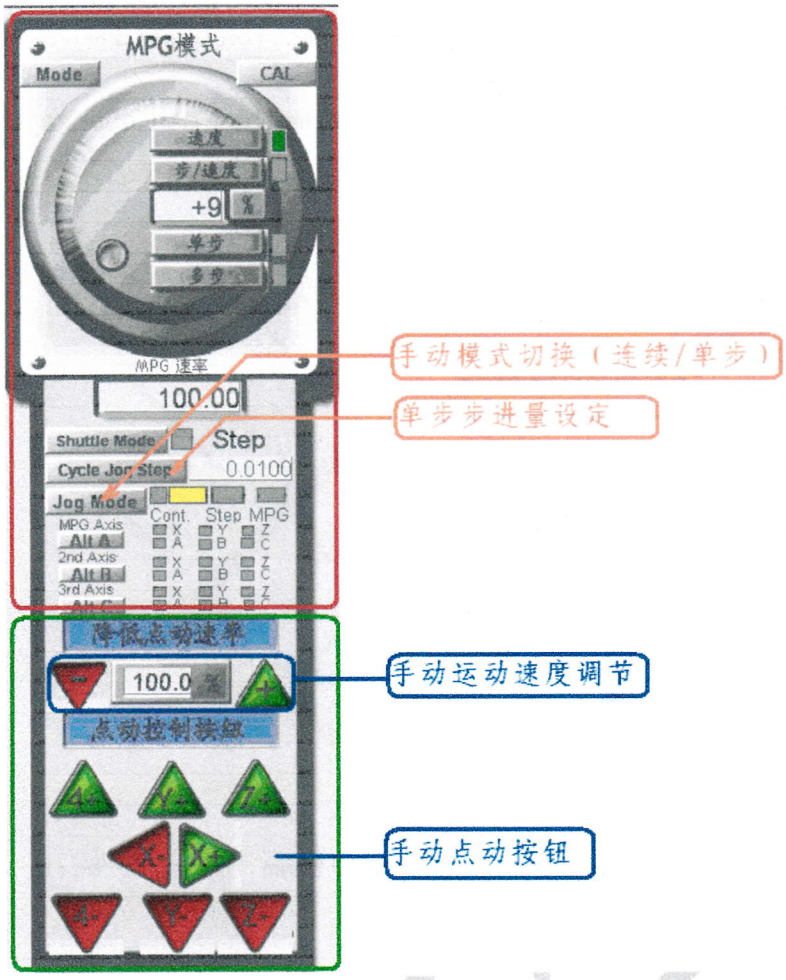
* g, spindle manual control (open/close) shortcuts F5, Can add speed, incremental place, can according to click on 10 thousand

* h, feeding rate adjustment (shortcuts F11 F10),

* 5.2 manual control shortcut key direction (page, page down arrow), manual speed shortcuts:"{"and"}"

* 5.3 procedure manual function interface

In the program under the condition free press the keyboard Tab keys can open manual functions, interface as follows



The sixth chapter novice learning methods

6.1 study method

First, please understand operating machine software and operation method of the related machines, don't blindly run again after running!

Learning to operate machines can not installed with drawing tools and methods: (words) will be a ballpoint pen with elastic fixed in the Z axis (or above) running program axis, so that can assure safety and can learn the basic operation of the machine, the process will please spindle motor out plug, to ensure the safety of you!

Basic tools can be installed after the master, try try using a soft material carving as possible, lest because the material carving machine or improper operation and broken sword

Very sharp knives, please must pay attention to safety!

The basic motion. 6.2

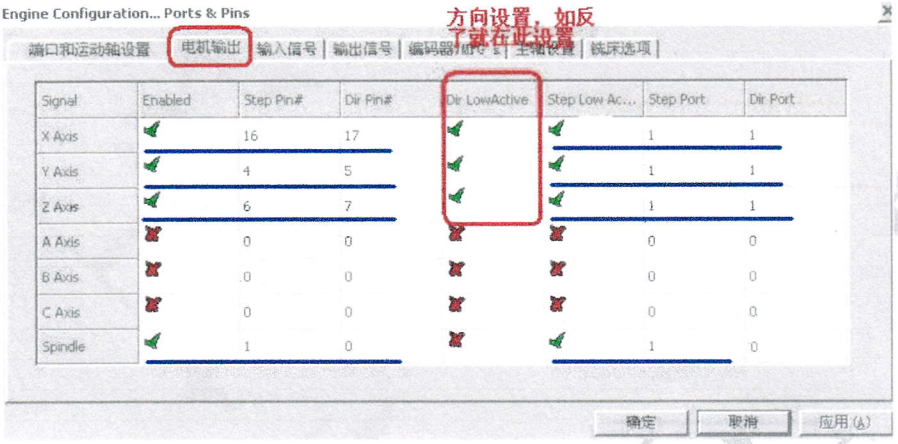
First open the control software to open controller power

Closed emergency stop (state) if the red and green evergreen interval is launched stop flashing, cannot use any function

Use the keyboard, check each shaft manually controlled movement direction correctly, the direction key should be consistent with the tools, key direction upward movement, DOWN keys downward motion

Note: the axial direction for incorrect according to the method can change the direction of change

As shown



The basic use of 6.3 process

A document, edit the original

Format: CAD file (format: DXF) / PCB files/picture BMP...

Text or graphics can directly use the text or graphics Artcam tools to edit

B, generating processing code

Setting and calculating tool path generation TAP files/NC... .

Relevant software is introduced: Artcam wen tai carved with etc

C, clamping work-piece (for flatness requirement high processing such as PCB must use double-sided gum and benchmark plate fixation)

Note: the base plate can use PVC materials such as the acrylic, use double-sided gum paste on the platform, the size according to the needs, use the milling around 3mm

The milling plane

D, origin and knife

Will move to the origin of the workpiece tool, click Settings for the origin of the software

(manual speed adjustment shortcut "[" lower")."

Example: the origin of the workpiece in lower XY in the origin of the workpiece, Z surface

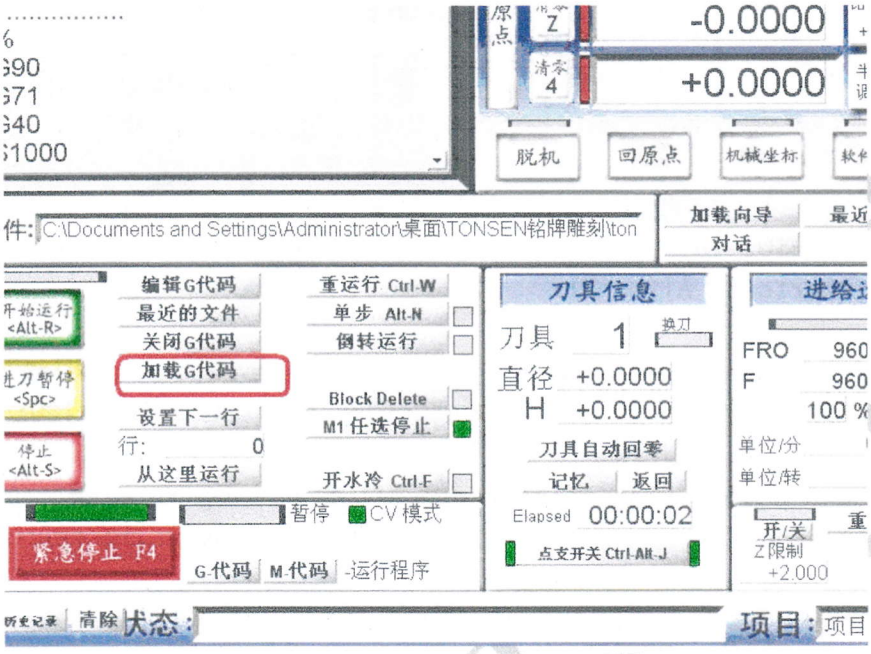
Through the keyboard manual control tool will move to the left, click on the software workpiece origin and Settings for dao (Z) will set tool and workpiece surface move,

cutting time clicking Z reset

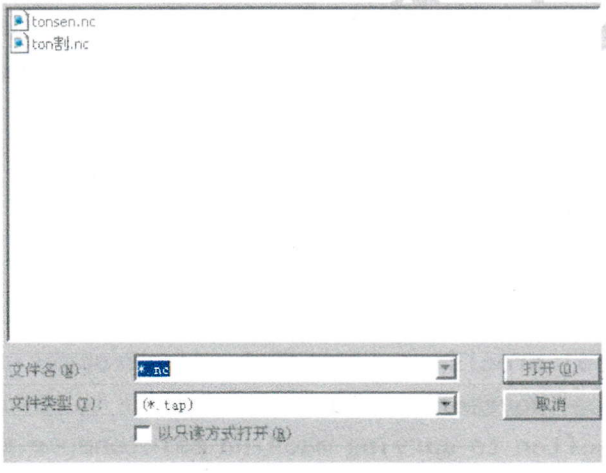
If need to adjust position after the sword, or highly through direct modification coordinates to compensate

Specific means is: left click on to modify the coordinates of the shaft and input coordinates, then press enter confirmation (im) under the condition for English, E, started processing

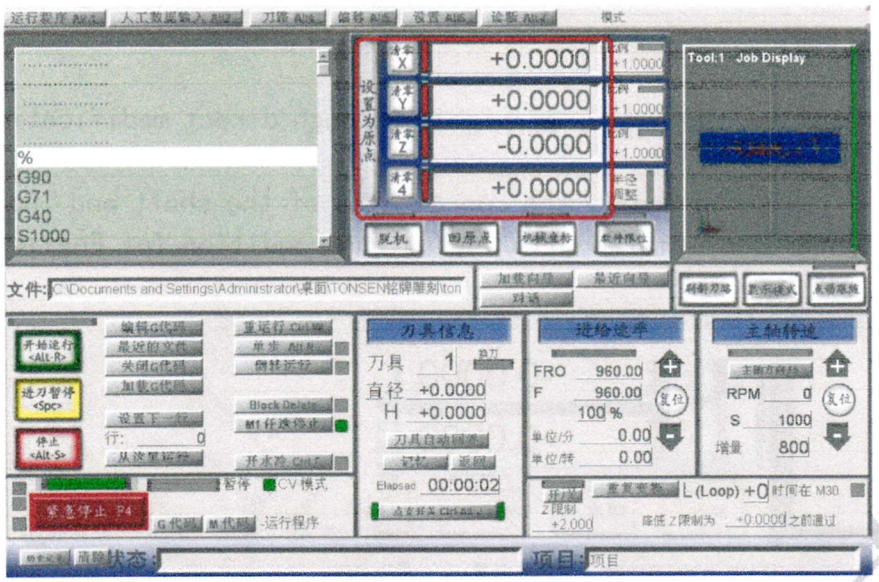
1, loading G code



2 and selection process documents



3、and coordinates zero



4, reduce feed rate - 50% (F10) increase shortcuts to rate (shortcuts F11) 5 and click on "start" (shortcuts Alt + R)

6, after the operation in the machining process, adjust feeding rate according to actual processing documents and material and adjusting feed rate 0% ~ 100%

7 and machining process can point "stop" (shortcuts Alt + S) stop running After the stop to continue processing, pay attention to the first open the spindle

8 and the use of suspended, in the machining process may at any time suspend processing, suspended after start operation can continue processing

Chapter 7 of the note

1, processing automatically, spindle automatically shut off, but still in this device driver motor energized condition, so if long time not operate please close controller power or emergency stop

2 emergency, please press the emergency stop or shortcut ""~""

Chapter 10: maintenance and maintenance

Engraving machine is computer control precision equipment, its processing movement is composed of precision mechanical movement mechanism, in order to ensure the normal use of carving machines, must often to carving machine maintenance and concrete requirements are as follows:

1 the daily maintenance

Will be working site, keep clean the machine, water-cooled spindle each use clean water before must check whether smooth.

Must often clean spindle chuck.

Timely liquidation silk pole on the rails and dirt, and the scraps to the wire

rod guide added lubricant grease or.

Regular maintenance cycle (2) three months),

Open the Z axis, ball screw, protect clean on the rails and dirt, then gave scraps ball screw and guide with grease or oil

Check the connecting cable connection.

Check belt wear

Chapter 11 each type machine motor parameters

After installing the software without the correct parameters Settings

轴	项目	TS-2518B/ TS3040B	TS-2518C	TS-3040C	TS-3040C-H50	TS-7050
X	Steps Per	640	400	400	320	320
	速度	600	1200	1200	1200	2000
	加速度	300	400	400	400	400
Y	Steps Per	640	400	320	320	320
	速度	600	1200	1200	1200	2000
	加速度	300	300	300	300	300
Z	Steps Per	640	640	640	640	320
	速度	600	800	800	800	2000
	加速度	300	300	300	300	300

Appendix 1:

Engraving machine tool selection

Tool use guidelines:

1 the acrylic cutting processing, recommend using spiral milling, single blade is processing smokeless insipidity, speed, high efficiency, non-sticky, environmental protection, its special real manufacturing process ensure machining the acrylic not and very thin knife (or even no knife), the surface is bright and clean level off. Surface to grind arenaceous effect, recommend using double spiral milling three blade.

2 density board (advertising mold cutting with), recommend using double spiral milling large scraps discharge, it has two high capacity scraps discharge groove, double design, has very good scraps discharge function, and then reach good balance in process, tools, high density board, don't smoke, black hat long service life etc.

3 aluminum cutting, recommend using single blade special-purpose aluminum with

cutter. In the process, non-stick knife, speed, high efficiency.

4 precision machining, recommend using small anaglyph round bottom kedao.

5 the cork, density board, original wood, PVC, acrylic large-scale deep anaglyph processing, recommend using single blade spiral milling.

6 no burr below on cutting, recommend using single blade, the double downcutting cutters.

7. Metal sculpture processing, recommend using single blade knife, double straight slot pan.

8. 3 D wrecking maze &sealed ring, and a sharp edge, can make accurate 3D sculpture processing.

9 high density board, wood cutter tooth recommended edges.

The MLB, plywood, processing, recommend using double straight slot cutter.

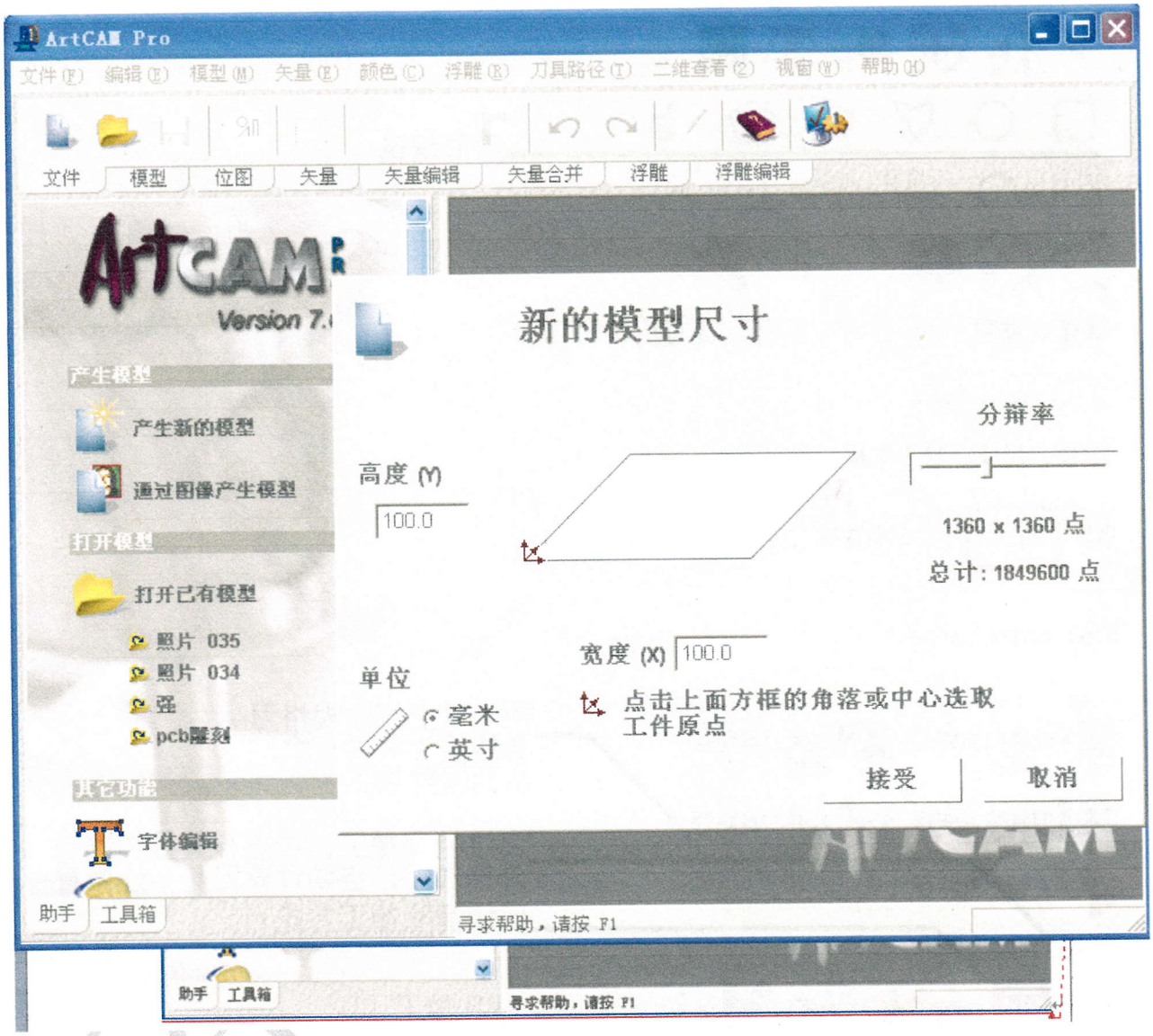
11. Slice blade effect, processing products processing, no burr surface will become warped.

12 metal mould machining milling cutter, recommend use tungsten, surface coating with hard titanium tresses.

13. The acrylic mirror sculpture processing recommended wrecking diamond.

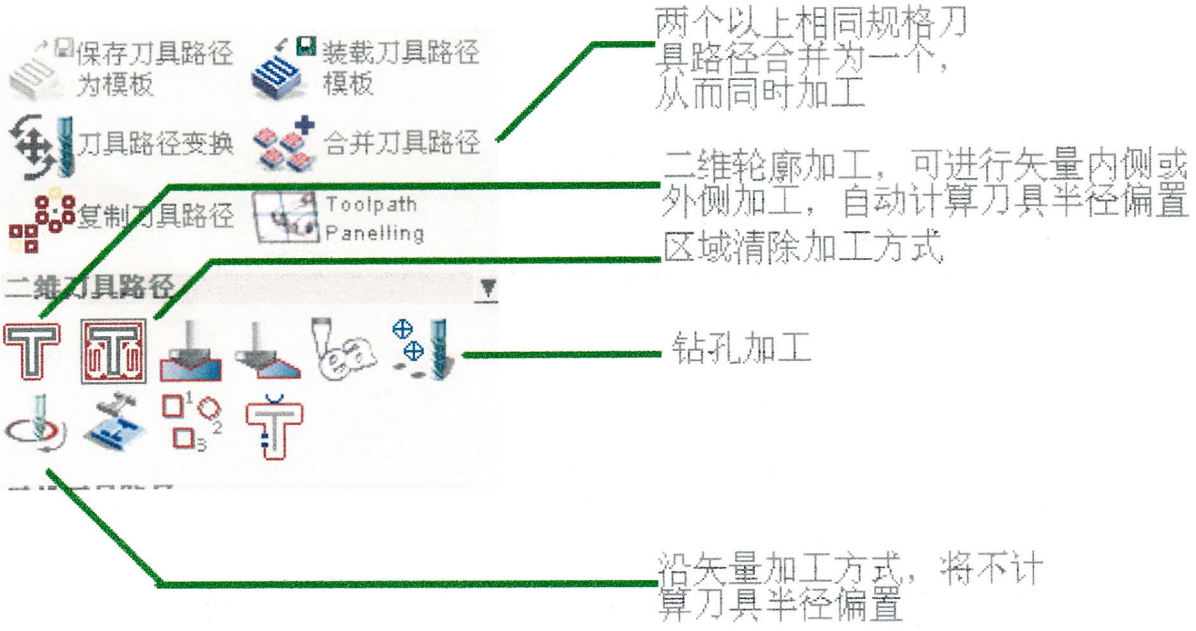
14 as early particieboard recommended many stripes cutters.
Appendix 2

ARTCAM software interface and basic function is introduced
(detailed check discs advanced tutorial lessons)
1
interface,

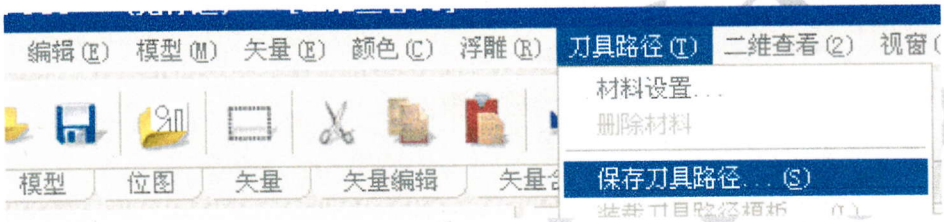


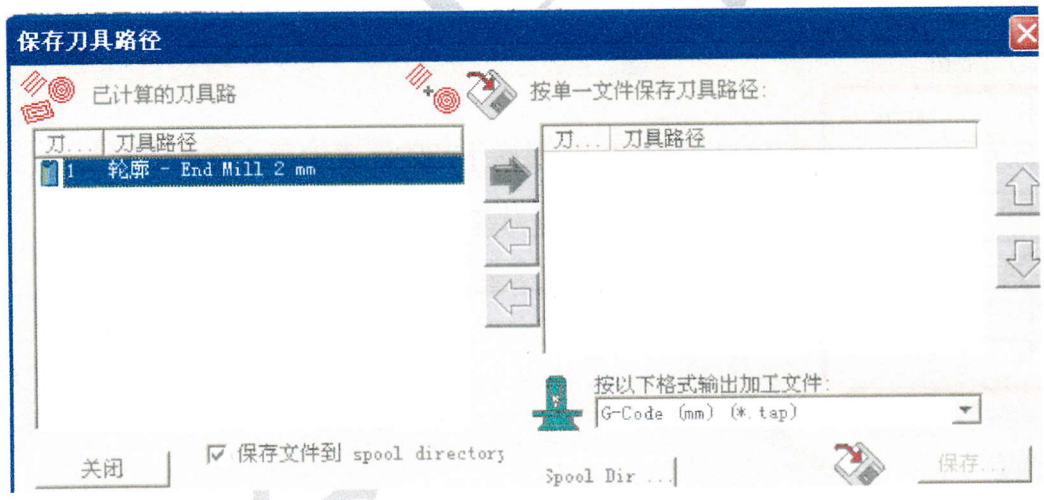
Vector editing area

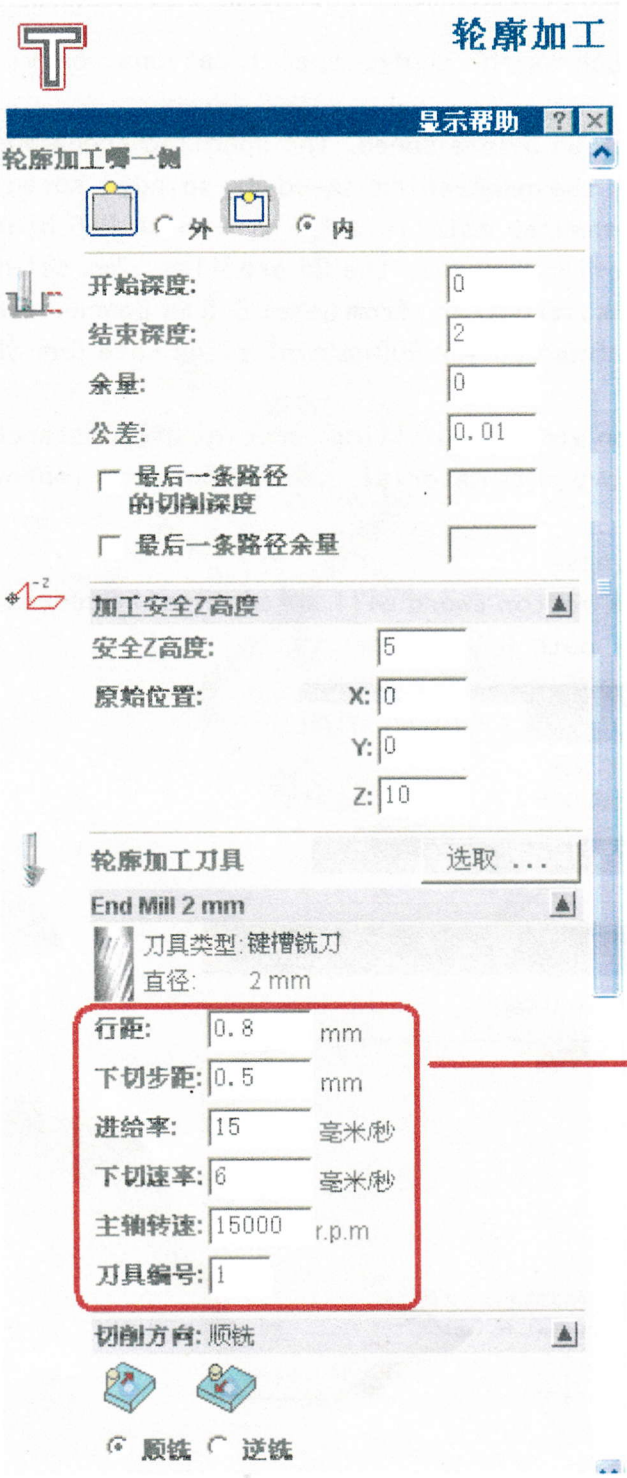
Tool. path. parts



Basic processing parameters Settings (such as the depth, specifications, carving speed, spindle speed, etc.)
Note: no, just a specified parameters such as a safe speed, the specific scope when still can control software by adjusting the processing speed or spindle speed
Mm diameter to a deep hole of 2mm, for example, materials for 2mm thick PVC board
As the chart shows, processing mode selection process, the 2d profiles, 2mm safety depth of machining tool select Z highly 5mm 2mm cutter, from asher 0.5 mm downcutting step is to cut 2mm depth (four) feedrate 15mm/SEC (or 900mm/min) slice rate 6mm/SEC (or 360mm/min) spindle 15,000
Commonly use the default cutting direction along the milling, special circumstances can adopt inverse milling (such as sculpture soft material, such as cork, to improve smoothness, etc.)
Other general can use the default Settings
Choose the right to processing, now click vector sword will automatically generate
Finally, save the format selection tool path G Code (mm) tap







加工方式

雕刻深度

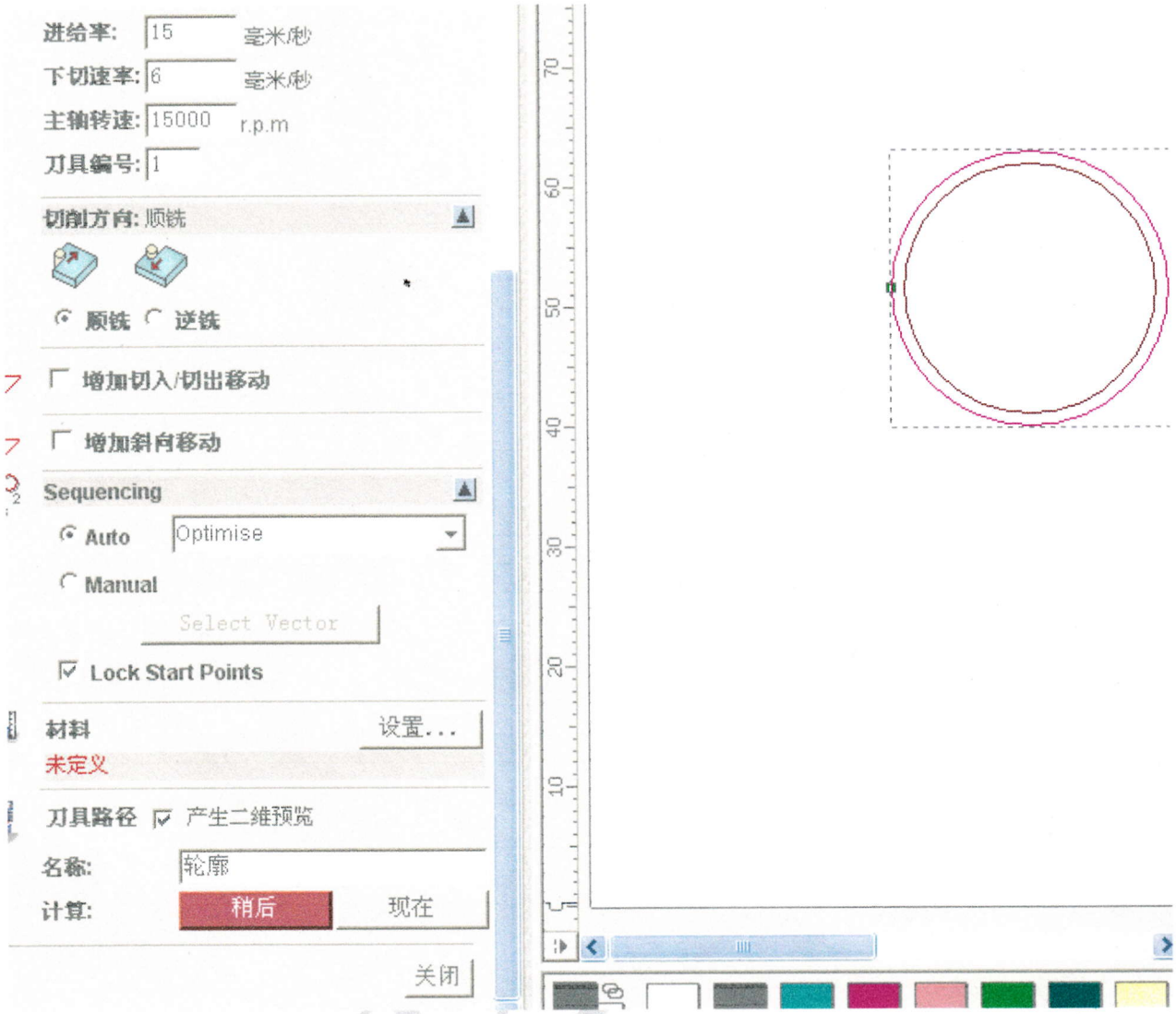
加工安全Z轴高度

开始或结束Z轴高度

每次下切的深度设定（分层雕刻）

走刀速度

下刀速度



Engraving machine parameters (for example) : other acrylic material can be tool, click the reference list

刀 具	行距 路径间距	下切步距	下切速率 MM/秒	进给率 MM/秒	主轴速度
1.5 柱刀	0.6	0.2-1	2-7	5-15	18000
2.0 柱刀	0.8	0.5-1	2-7	5-15	18000
2.0 双刃铣刀	0.8	0.5-1	2-7	5-15	18000
10° -0.1	0.03	0.05-1	1-2	3-5	18000
10° -0.5	0.2	0.2-1	2-6	5-12	18000
30° -0.2	0.08	0.2-1	2-5	4-10	18000
30° -0.1	0.03	0.05-1	1-4	3-8	18000